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Climate Change: Antarctica

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Background:

Climate change is an effect that is happening all over the planet. Effects include, but are not limited to, the rising in sea levels, shrinking of mountain glaciers, accelerating ice melt, and shifts in flower and plant blooming. Many know this warming as the "greenhouse effect".
While being a controversial topic in politics, climate change is believed by many scientists and researchers to be caused by the burning of fossil fuels and putting out heat trapping gasses into the air, which include carbon dioxide and other greenhouse gases.

In the atmosphere, there are certain kinds of gases that block heat from getting out. The gases that contribute to this effect include water vapor, nitrous oxide, carbon dioxide, and methane. The ongoing human activity on Earth is what contributes to this natural greenhouse effect. In the past centuries, the burning of fossil fuels like coal and oil have been the main concentration of the amount of carbon dioxide in the atmosphere.

With the increase of life on Earth, it is estimated that over the past fifty years, there is a 95% probability that human activity warmed our Earth. Modern civilization has raised atmospheric carbon dioxide levels from "280 parts per million to 400 parts per million in the last 150 years." Therefore, many scientist have concluded that human activity plays a large role in climate change (NASA).

Because climate change is a global issue, it affects both the social and environmental determinants of health, like clean air, safe drinking water sufficient food, and secure shelter for humanity. For these reasons, it is important to understand the effects and how to reduce the ongoing risks of climate change, since climate change is irreversible (World Health Organization).

Impacts of Climate Change:

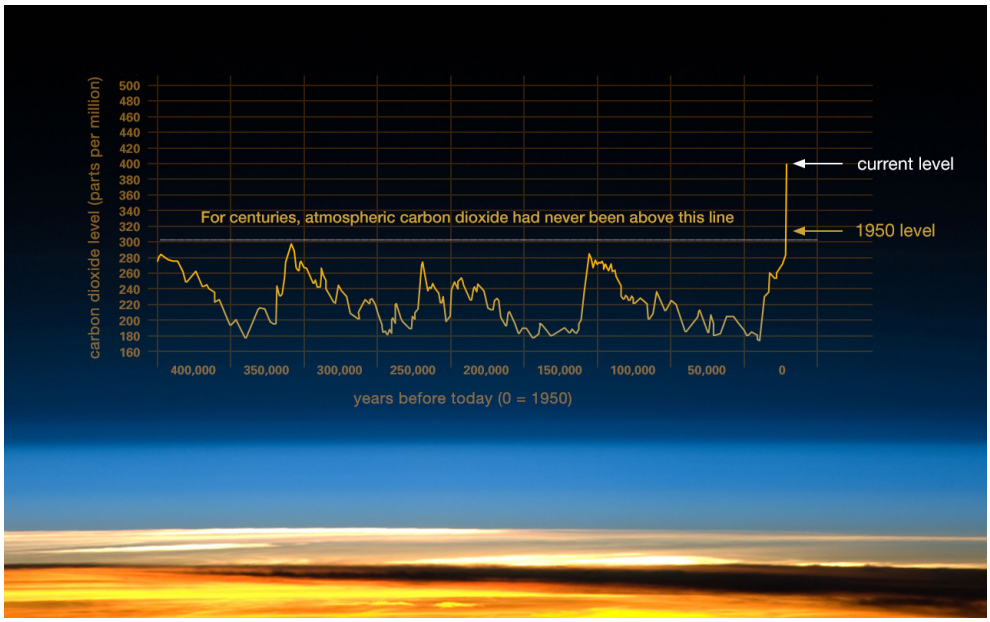
Although climate change is prevalent globally, one specific region where the effects can be seen is the Antarctic. Observations of the temperatures in Antarctica haves found that the sea levels are rising because of climate change. In the West Antarctic, the ice sheet has become vulnerable to the oceanic warming because of the large parts of the sheets that lie below sea level. It is important to understand the prevalence of climate change is seen when comparing numbers from the past to the present temperatures, which determines whether the climate has changed or remained the same (Miles, Stokes, Vieli, & Cox, 2013)

Intervention:

While there is no cure or solution to climate change, there are ways for people to help reduce the risks of climate change. According to NASA, the response to climate change is a two-part approach that includes mitigation, which is the reduction of how much greenhouses gasses are emitted into the atmosphere, and adaptation, which would be learning to live and adapt to the new climate that is already changing. Small things like recycling, driving energy efficient cars, and overall just educating ourselves of these issues that we cause can help avoid the future effects that are worse than they are now (NASA). Because climate change is a global issue, everyone needs to come together to help reduce the harmful effects of climate change to prolong the living conditions we will live in.

Public Health Issue:

The West Antarctic is one of the fastest warming areas on Earth. Climate change has caused extreme weather in other parts of the world, but in the Antarctic, the ecosystems largely affected are the marine-dominated coastal system and the terrestrial polar desert (Fountain, Virginia, Saba, Adams, Doran, & Fraser, 2016). With sea levels rising due to the melting glaciers and ice sheets, in the future we may see parts of land being more covered in water than they are now (NASA).



Left: graph based on comparison of atmospheric samples in the ice cores. (NASA) Right: map of West Antarctica w/ Ice Sheet. (NASA)

Conclusion:

In conclusion, climate change has a long-lasting effect on both marine life and human life. The greenhouse effect caused by the human population causes the climate to change and create extreme weather, especially in the Antarctic. Here, we see ice sheets melting, creating the sea levels to rise as well as marine life, like krill, dying and disrupting the food chain that keeps the ecosystem going (Fountain et al., 2016).

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